

ABSTRACT OF THE DISCLOSURE

A drive system which integrates an electric generator, one or more electric motors and an electronic control module is configured as a variable speed drive in either single, dual or four wheeled traction drive configurations for a mower. The generator is mechanically driven by the output shaft of an internal combustion engine to generate the electrical power for energizing the electric motors. A central computer in the electronic control module controls the output voltage of the generator and the speed and torque of each of the motors in the drive system. The speed input signal for the motors can be analog signals that come from sources such as a joystick, a potentiometer mounted on a steering wheel, control panel, foot pedal or remote location or digital signals from a digital device. Position/speed detectors on each motor and the generator send signals back to the central computer for closed-loop control of the generator and of the motors. The generator supplies the DC voltage to the power control board for each motor as commanded by the central computer. The rotor of each motor is connected to a gearbox for speed reduction and increased torque that is applied to the wheel mounted on the output shaft of the gearbox. When the motors are not being driven, the generator may optionally supply DC power to the input of an inverter that has an output to standard electric utility AC outlets that can be used to power auxiliary equipment.